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10/573,586

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Seiji Oka

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EXAMINER

OREILLY, PATRICK F

ART UNIT

PAPER NUMBER

3749

MAIL DATE

DELIVERY MODE

01/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/573,586

Applicant(s)

OKA ET AL.

Examiner

Patrick F. O'Reilly III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/28/2007; 11/14/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: English translation for KR 1999-020737 (non-machine generated).

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DETAILED ACTION

1. This action is in response to applicant's amendment mailed on October 24, 2007.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on September 28, 2007 and November 14, 2007 are acknowledged. The submissions are in compliance with the provisions of 37 C.F.R. § 1.97 and 37 CFR § 1.98 and, therefore, the references therein have been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 10 recites the limitation "in either one of a cooling operation and a heating operation" in lines 4-5 of this claim. The use of this limitation renders the claim indefinite because it uncertain whether the control unit must be capable of selectively adjusting the air flow direction of the air deflector during both mutually exclusive cooling and heating operations, or alternatively, during either a cooling operation or a heating operation. Because of this ambiguity, one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. However, for the purpose of an examination on the merits, the examiner has

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considered this limitation to require that the control unit must be capable of selectively adjusting the air flow direction of the air deflector during either a cooling operation or a heating operation.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-4, 6-8, 10, 14, 16-17, and 19-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application Pub. No. GB 2 260 830 A ("GB '830") in view of Japanese Patent Application Pub. No. JP 2000-046401 A ("JP '401"). These two references, when considered together, teach all of the elements recited in **claims 1-4, 6-8, 10, 14, 16-17, and 19-20** of this application.

8. In particular, claim 1 of this application is obvious when the GB '830 reference is viewed in light of the JP '401 reference. The GB '830 reference discloses the invention substantially as claimed, including: an air conditioning mechanism (air conditioner 100 having a heat exchanger, indoor fan, fan motor 11, etc.) configured and arranged to perform air conditioning of indoor air; an air deflector (outlet 250 that is equipped with an air direction-adjustment device which can adjust the horizontal and vertical direction of the discharged air 25A) configured and arranged relative to the air conditioning mechanism (100) to selectively adjust an air flow direction in which conditioned air (discharged air 25A) is discharged from the air conditioning mechanism (100); a control unit (controller 20 in the form of a microcomputer with a user interface 295)

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including memory (because the controller 20 is a microcomputer that is capable of storing a user's settings inputted into the user interface 295, the controller 20 inherently includes memory) storing a plurality of predetermined operational settings corresponding to control of the air flow direction of said air deflector (by virtue of the user interface 295, the user can specify the settings for the air deflector 250, such as a natural-wind simulation mode and whether the air will be discharged directly towards the users or around the users, etc.; these user-specified settings are, in turn, used by the controller 20 to determine air deflector blade settings, etc.), the control unit (20) being operatively coupled to the air conditioning mechanism (100) and configured to selectively operate said air conditioning mechanism (100) in any one of the plurality of operation modes (natural-wind simulation mode, "towards user" mode, "around user" mode, etc.) including a powerful operation mode whereby a capacity of said air conditioning mechanism (100) is temporarily increased (the controller 20 can be programmed such that the fan motor 11 is increased to provide a larger volume of air for a limited time duration while a human sensor 30 detects the presence of a person), said control unit (20) being further operatively coupled to the air deflector (250) to selectively adjust the air flow direction of said air deflector (250) to a corresponding one of the predetermined operational settings (e.g., "towards user" mode, "around user" mode, etc.), for control of the air flow direction of said air deflector (250) when the powerful operation mode command is selected (based upon the user's programmed preferences, the control unit 20 selects the powerful operation mode, which results in a larger volume of discharged air, when the human sensor 30 detects the presence of a person). Refer to GB '830, Figures 13-16; page 6 of the specification, lines 9-13; page 8, lines 17-22; page 13, lines 17-25; page 14, lines 1-25; page 15, lines 1-24; and page 17, lines 15-25.

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However, claim 1 of this application further discloses that in the powerful operation mode, the heat exchanging operation of said air conditioning mechanism is temporarily increased. The GB '830 reference does not contain this additional limitation.

The JP '401 reference, although, teaches an split-system air conditioning unit having an indoor unit, an outdoor unit, and a control unit (5) that increases the quantity of supply air from the indoor unit, and further increases the operation frequency of a compressor of the outdoor unit during "powerful operation" mode for the purpose of increasing the overall cooling capacity of the air conditioning system so as to better accommodate user comfort settings. See JP '401, English abstract, also see English translation of Detailed Description for JP '401, paragraph [0012]. Therefore, when the GB '830 reference is viewed in light of the JP '401 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the air conditioning unit of the GB '830 reference by additionally increasing the operation frequency of the compressor during the powerful operation mode, as taught by the JP '401 reference, in order to increase the overall cooling capacity of the air conditioning system so as to better accommodate user comfort settings.

9. In regard to claim 2, the GB '830 reference further discloses that predetermined operational settings include parameters (air deflector blade settings for "towards user" mode) to adjust the air flow direction of said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) during the powerful operation mode so that air is discharged in a direction (W1, W2) in which people are present (in the first directional mode, the controller 20 modulates the operation and actuation of the horizontal and vertical air direction-adjustment devices 25, 26 of the outlet 250 so as to direct the discharged air in directions W1, W2 towards

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detected human bodies). Refer to GB '830, Figures 14-15; page 8 of the specification, lines 17-22; page 15, lines 7-13; and page 16, lines 12-22. Therefore, GB '830 in view of JP '401 also meets the language of this claim.

10. In regard to claim 3, the GB '830 reference further discloses that the predetermined operational settings include parameters (air deflector blade settings for "around user" mode) to adjust the air flow direction of said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) during the powerful operation mode so that air is discharged in a direction (W12, W12', W14) in which people are not present (in the second directional mode, the controller 20 modulates the operation and actuation of the horizontal and vertical air direction-adjustment devices 25, 26 of the outlet 250 so as to direct the discharged air in directions W12, W12', and W14 around, and away from, detected human bodies). See GB '830, Figures 14 and 16; page 8 of the specification, lines 17-22; page 15, lines 7-13; page 16, lines 23-25; and page 17, lines 1-14. Consequently, GB '830 in view of JP '401 also teaches the language of claim 3.

11. In regard to claim 4, the GB '830 reference further discloses that the predetermined operational settings include parameters (air deflector fixed blade settings) to maintain the air flow direction of said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) at a fixed orientation during said powerful operation mode (in the first directional mode, where air is directed towards the person, the discharged air is directed in fixed directions W1, W2 – Fig. 14, whereas, in the second directional mode, where air is directed away from the person, the discharged air is directed in fixed directions W12, W12', and W14 – Fig. 16). Refer to GB '830, Figures 14-16; page 8 of the specification, lines 17-22; page 15,

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lines 7-13; page 16, lines 12-25; and page 17, lines 1-14. Thus, GB '830 in view of JP '401 also meets the language of claim 4.

12. In regard to claims 6 and 7, the GB '830 reference further discloses that (claim 6) the control unit (controller 20) further includes a timer configured and arranged to selectively limit a time in which said control unit (20) performs the powerful operation mode (the controller 20 has timing capabilities such that the fan motor 11 can be increased to provide a larger volume of air for a limited time duration while a human sensor 30 detects the presence of a person), and wherein (claim 7) the control unit (controller 20) is further operatively coupled to the timer such that a time at which said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) is stopped during the powerful operation mode is set in said timer (the controller 20 has timing capabilities such that the operation and actuation of the horizontal and vertical air direction-adjustment devices 25, 26 is modulated for a limited time duration so as to direct the discharged air 25A either towards or away from detected human bodies). Refer to GB '830, Figures 14-16; page 15 of the specification, lines 17-23; page 16 of the specification, lines 12-25; and page 17, lines 1-14. Therefore, GB '830 in view of JP '401 also meets the language set forth in these claims.

13. In regard to claims 8, 16, and 19, the GB '830 reference further discloses that the air deflector (outlet 250) comprises a vertically movable flap (the air direction-adjustment device of outlet 250 includes a set of vertical-movable grilles 26 which can control the vertical direction of the discharged air). See GB '830, Figure 14; page 14 of the specification, lines 19-24. Consequently, GB '830 in view of JP '401 also teaches the language of claims 8, 16, and 19.

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14. In regard to claim 10, the GB '830 reference further discloses that said control unit (controller 20) is further configured and arranged to selectively adjust the air flow direction of said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) when the powerful operation is selected and said air conditioning mechanism (100) operates in a cooling operation (the controller 20 and adjustable air outlet 250 are provided as components of an air conditioner 100 and therefore, can be used to selectively adjust the air flow direction during a cooling operation). Refer to GB '830, Figure 13-14; page 13 of the specification, lines 17-25; and page 14, lines 1-16. Thus, GB '830 in view of JP '401 also meets the language of claim 10.

15. In regard to claims 14, and 17, the GB '830 reference further discloses that the control unit (controller 20) is configured and arranged to selectively maintain the air flow direction of said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) at a fixed orientation during the powerful operation mode (in the first directional mode, where air is directed towards the person, the discharged air is directed in fixed directions W1, W2 – Fig. 14, whereas, in the second directional mode, where air is directed away from the person, the discharged air is directed in fixed directions W12, W12', and W14 – Fig. 16). See GB '830, Figures 14-16; page 16 of the specification, lines 12-25; and page 17, lines 1-14. Therefore, GB '830 in view of JP '401 also meets the language of these claims.

16. In regard to claim 20, the GB '830 reference further discloses that the predetermined operational settings include parameters (air deflector swing range settings) to swing the air flow direction of said air deflector (outlet 250 having horizontal and vertical air direction-adjustment devices 25, 26) within a fixed range (swing range A – Fig. 14) of swinging movement during

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said powerful operation mode (when the airflow and operation frequency of the compressor are increased). Refer to GB '830, Figure 14; page 15 of the specification, lines 6-15. Consequently, GB '830 in view of JP '401 also teaches the language of claim 20.

17. **Claims 5, 15, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application Pub. No. GB 2 260 830 A ("GB '830") in view of Japanese Patent Application Pub. No. JP 2000-046401 A ("JP '401"), and further in view of the alternative embodiment depicted in Figure 9 of the GB '830 reference. These two references, and the alternative embodiment depicted in the first reference, when considered together, teach all of the elements recited in **claims 5, 15, and 18** of this application.

18. In particular, claims 5, 15, and 18 of this application are obvious when the embodiment depicted in Figures 13-16 of the GB '830 reference is viewed in light of the JP '401 reference, and further viewed in light of the alternative embodiment depicted in Figure 9 of the GB '830 reference. As described above, the embodiment depicted in Figures 13-16 of the GB '830 reference, as modified by the JP '401 reference, discloses all the elements of the base claims upon which these three claims depend. However, claims 5, 15, and 18 of this application further disclose that the predetermined operational settings include parameters to selectively change a swing range of said air deflector to a different swing range during the powerful operation mode. The embodiment depicted in Figures 13-16 of the GB '830 reference, as modified by the JP '401 reference, does not contain this additional limitation. Although, the embodiment depicted in Figure 9 of the GB '830 reference teaches a control sequence of operation for an air deflector having horizontal and vertical movable grilles (25, 26) wherein, upon the detection of human presence in two or more different locations by a human sensor (3), a control device (2)

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commands the oscillation of the movable grilles (25, 26) so as to direct airflow (Wr) into an area (a) with varying direction based upon predetermined blade settings for the purpose of satisfying the comfort needs of multiple occupants located in discrete locations within a conditioned space.

Refer to GB '830, Figure 9; page 11 of the specification, lines 14-25; and page 12, lines 1-6.

Therefore, when the embodiment depicted in Figures 13-16 of the GB '830 reference is viewed in light of the JP '401 reference, and further viewed in light of embodiment depicted in Figure 9 of the GB '830 reference, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the air conditioning unit of GB '830 (embodiment of Figs. 13-16) in view of JP '401 by controlling the air deflector to oscillate in a different, predetermined swing range upon the detection of a human body during the powerful operation mode, as taught by the embodiment depicted in Figure 9 of the GB '830 reference, rather than to assume a fixed orientation as disclosed in the embodiment of Figures 13-16, in order to satisfy the comfort needs of multiple occupants located in discrete locations within a conditioned space.

Response to Arguments

19. Applicant's arguments with respect to pending claims 1-8, 10, and 14-20 have been considered but are moot in view of the new ground(s) of rejection.

Moreover, contrary to the applicants' assertion, the GB '830 reference does not teach away from the claimed invention simply because it contains a human sensor (30) for detecting the location of people within the occupied space. As described above in the rejections, the GB '830 reference discloses a microprocessor-based controller with inherent memory storage capabilities and a user interface provided in combination with the human sensor (30). All of these components are operatively connected in the air conditioning unit of GB '830 so that air

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flow direction of the air deflector (250) can be controlled in accordance with user-specified operational settings, unit parameters, and the location of humans within the occupied space at the time of unit operation.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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